

Dr. Andrew Z. Fire

Professor of Pathology and Genetics Stanford University School of Medicine

On the value of science

Andrew Fire

Departments of Pathology and Genetics, Stanford University School of Medicine

**For Presentation to the Science, Technology, and Innovation Subcommittee,
United States Senate Committee on Commerce, Science, and Transportation on
May 2, 2007.**

Senator Inouye, members of the committee, ladies and gentlemen. Thank you for the invitation today to speak on science and its value to our society. This is a certainly a worthy topic for discussion in such a forum and I hope that my comments will be helpful in stirring up debate and discussion.

Before we consider the value of science, we should first consider the goals of the scientific enterprise in this country.

Although each individual scientist brings a unique set of goals to their work, certain themes run throughout the scientific community and elsewhere:

Every American and every citizen of the world should have the opportunity to live a full and complete life without the ravages of tragic disease.

Every American and every citizen of the world should have access to sufficient resources and energy to fulfill their potential as individuals and as members of society.

Every American and every citizen of the world should have the opportunity to live in a world where they are safe from threats of terrorism, war, and other violence.

Our children, our grandchildren, and generations to come should have opportunities that are comparable to the best that our current society has to offer.

Scientific progress is by no means the only component in pursuing these goals. It is nonetheless a critical part. As our world inevitably changes, we will need to understand how these changes can affect our lives. As we become capable of greater manipulation of our environment, so questions of appropriate behavior, balance and sustainability become critical. We are at a turning point where technology and science will underlie most of the major decisions made by individuals, groups, and societies. There is no turning back from this.

Before we can talk about the value of science, we need to talk about limitations.

Science can help us to learn how the world works. Science can inform our decisions by allowing us to predict, albeit imperfectly, the concrete consequences of proposed action. Science and technology allow us to manipulate the world within us and around us using an ever-expanding array of tools.

Science can't, shouldn't, and doesn't supplant our value systems. The value we place on human life is not a scientific calculation. Likewise, the many issues we debate as a society: our allocation of resources between the young and the old, our definitions of the beginning and end of life, our ways to prioritize the individual and the society, our allocation of effort toward long term maintenance of the human race; all of these rely on fundamental value systems outside of and beyond the scientific enterprise. Although scientific data (from

